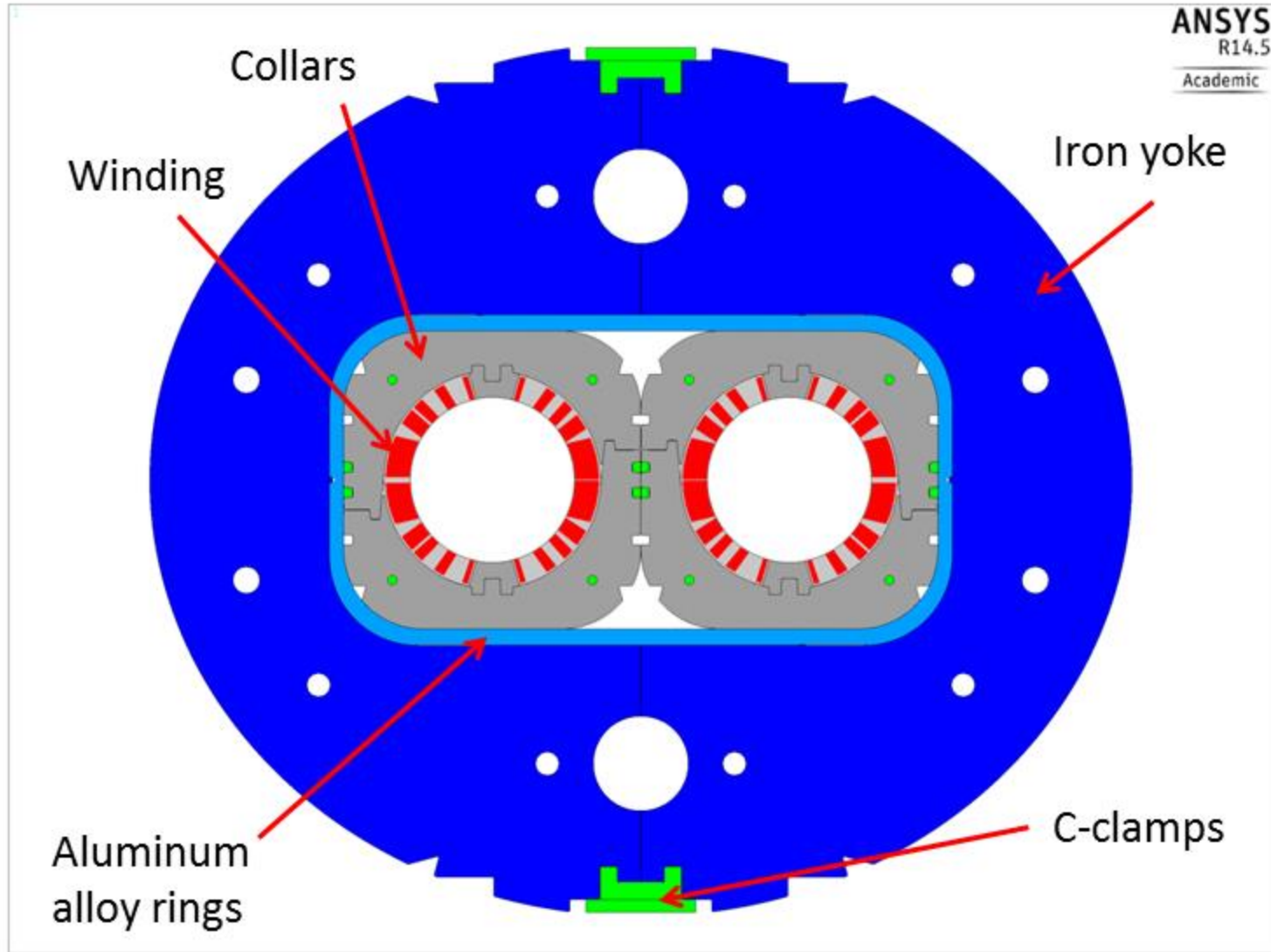
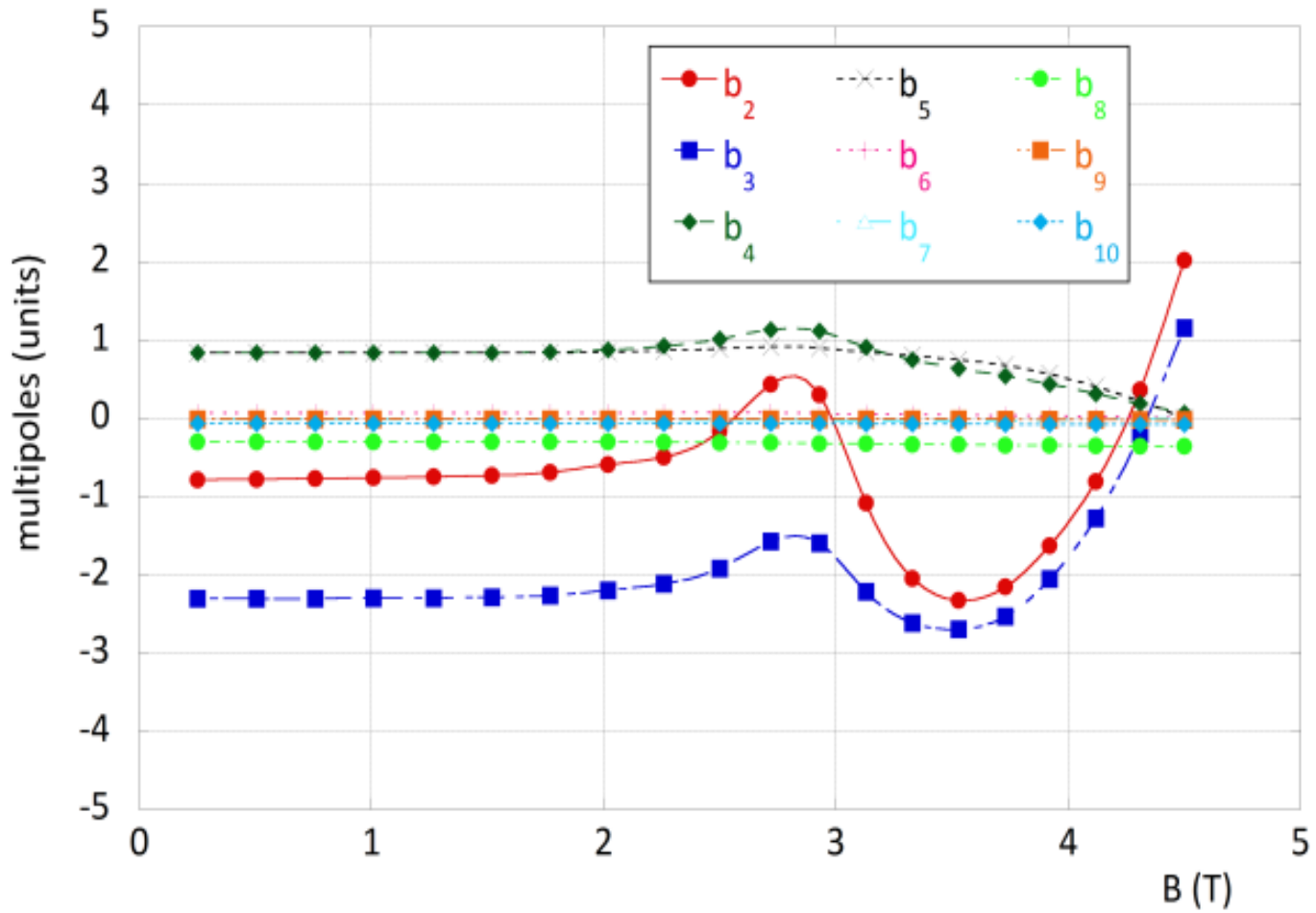


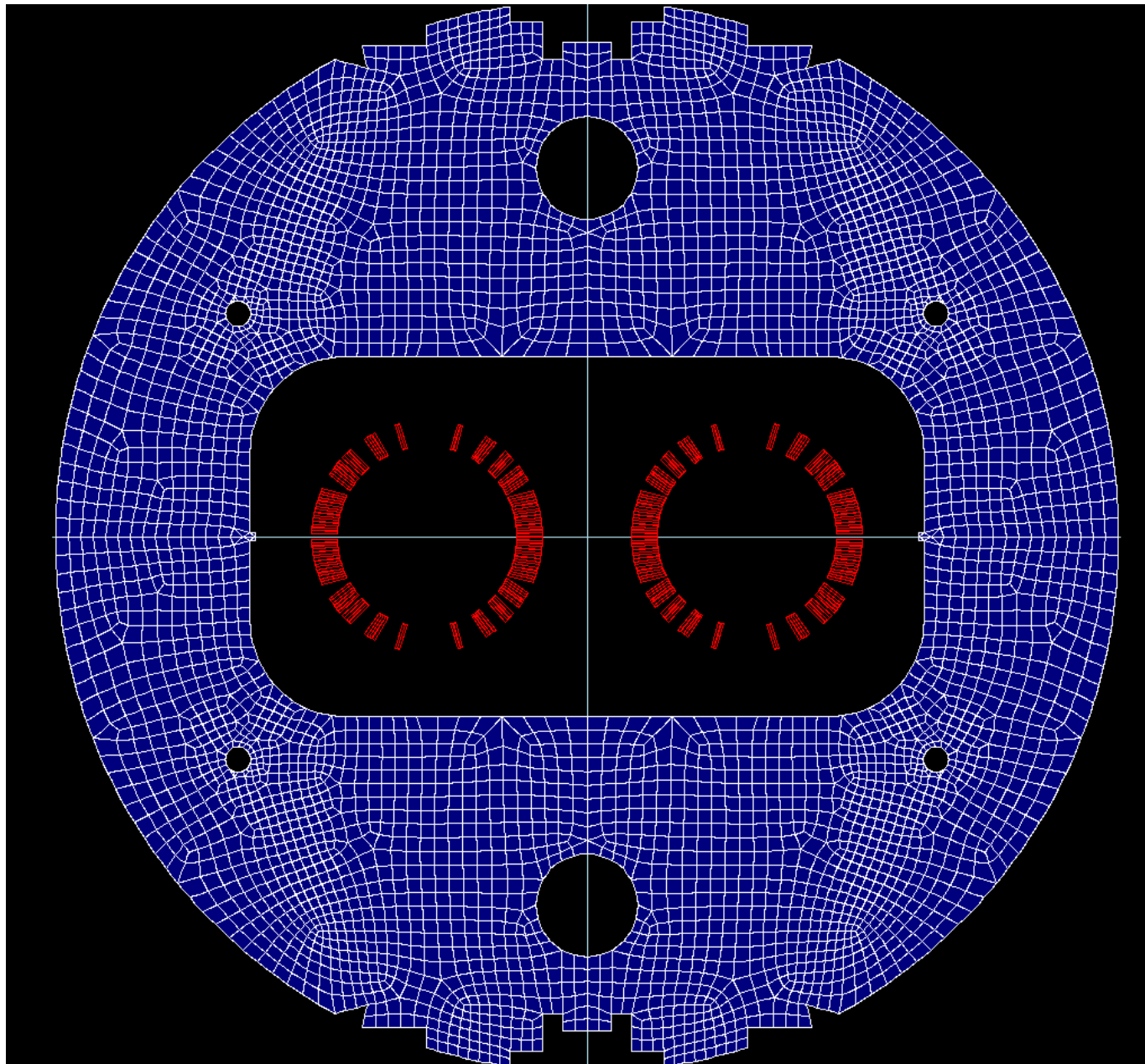
Present solution with elliptical cross section



Optimized field quality

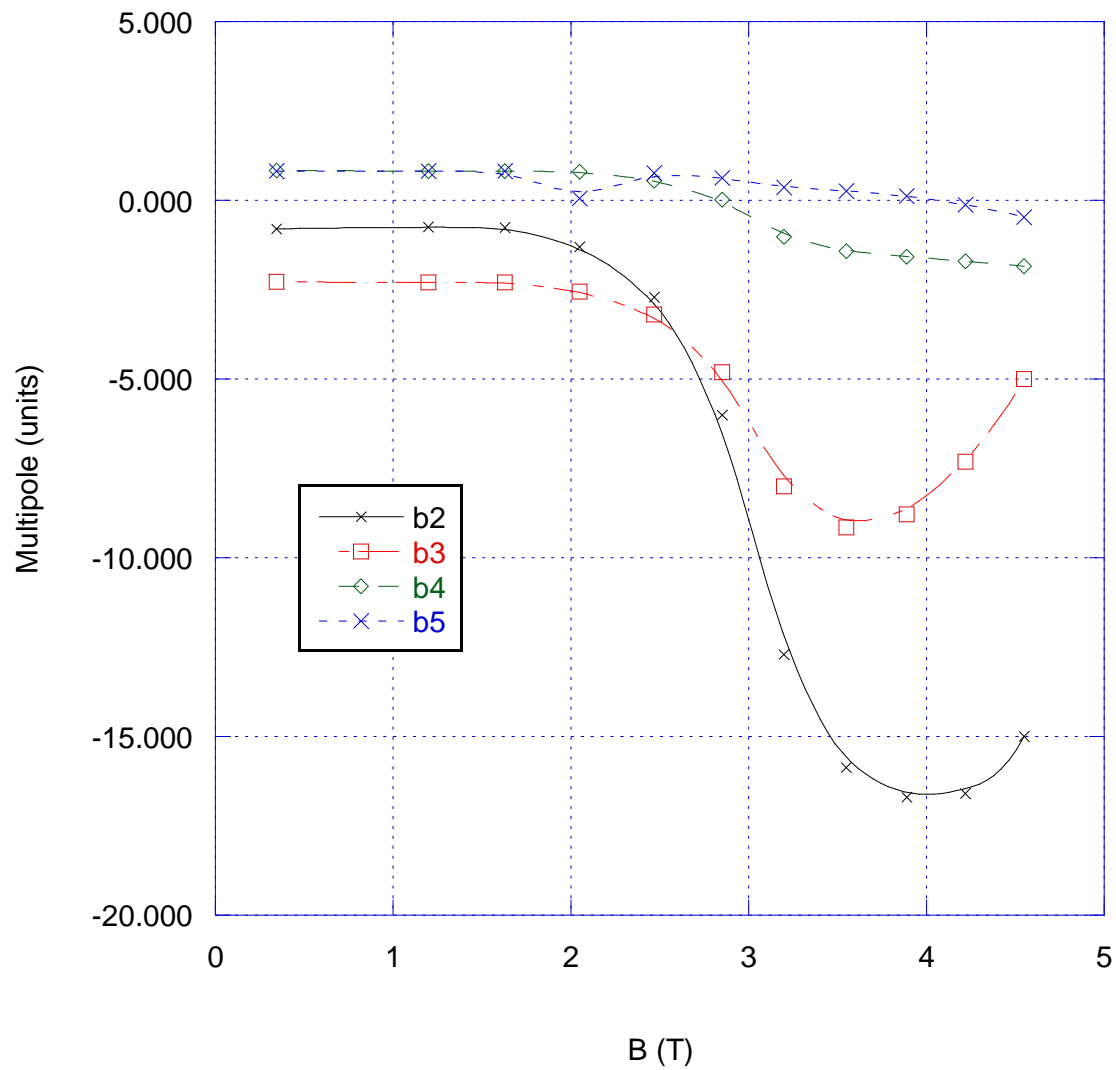


Alternative 1: cylindrical yoke

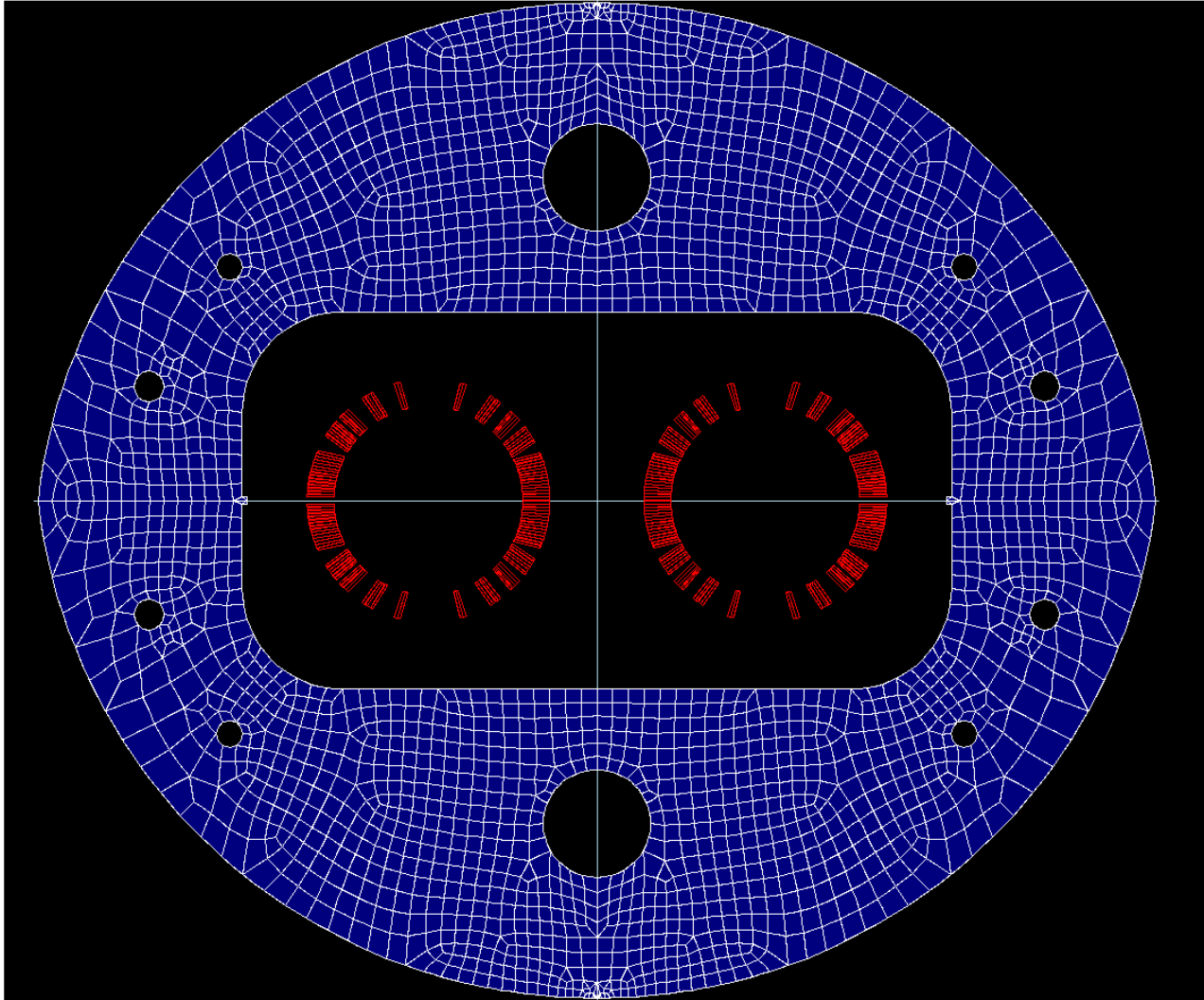


b2 and b3 are greatly worsened

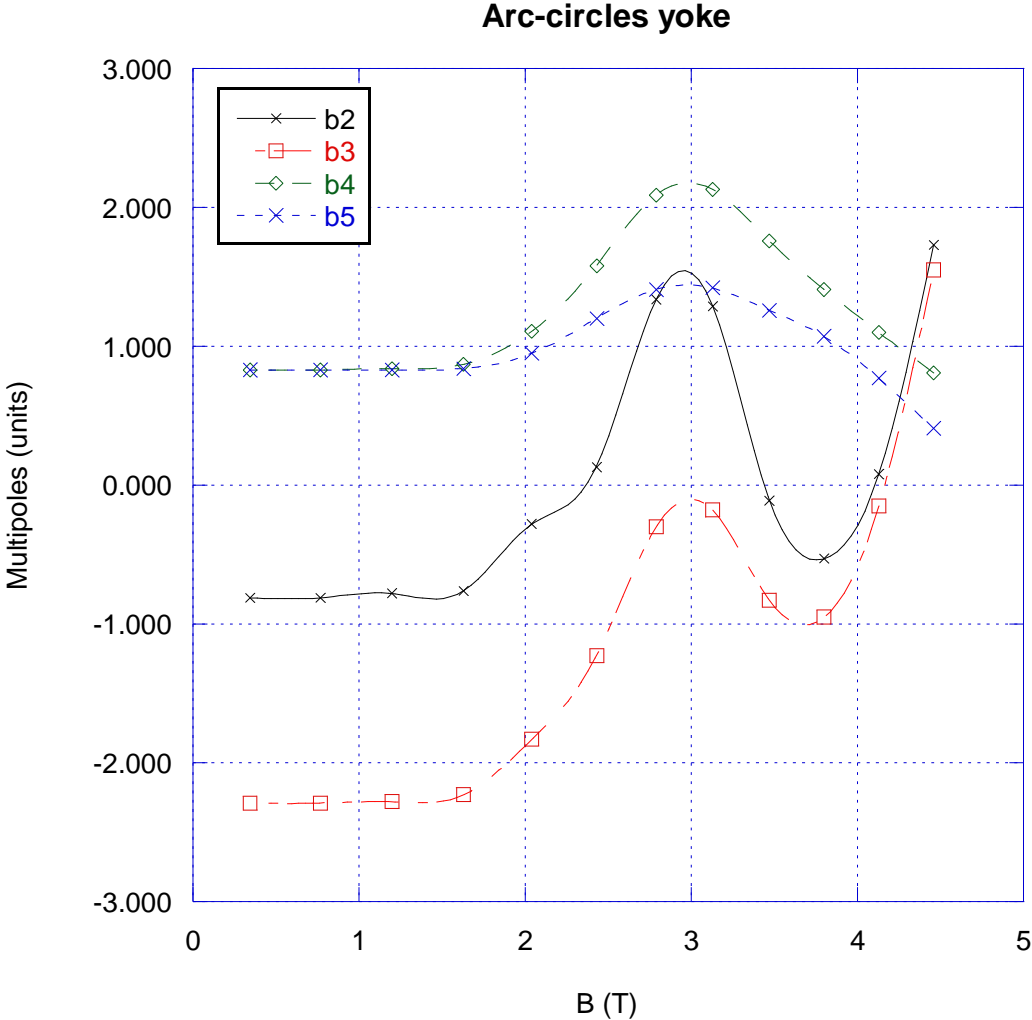
D2 cylindrical yoke



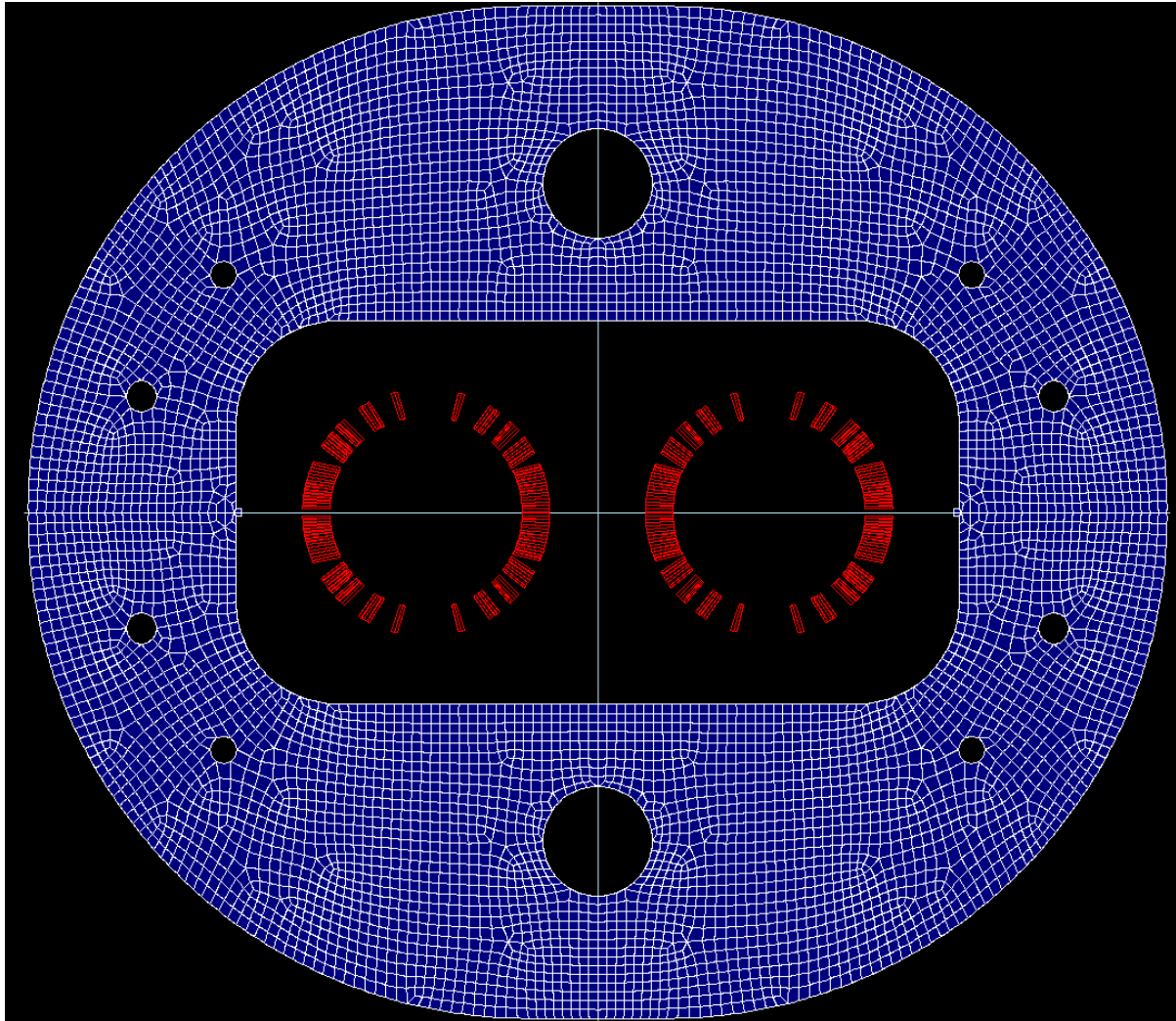
Alternative 2: Arc circles yoke. In this case the cuts on the poles are not included in the computation, but they would be present in the real design. The shall could be done with two arcs of circles with radius 312 mm. Weldings are in the midplane



In this case the current shall be increased to 12170 A. The multipoles seem to be acceptable. However we want to have the weldings between half shells in the pole



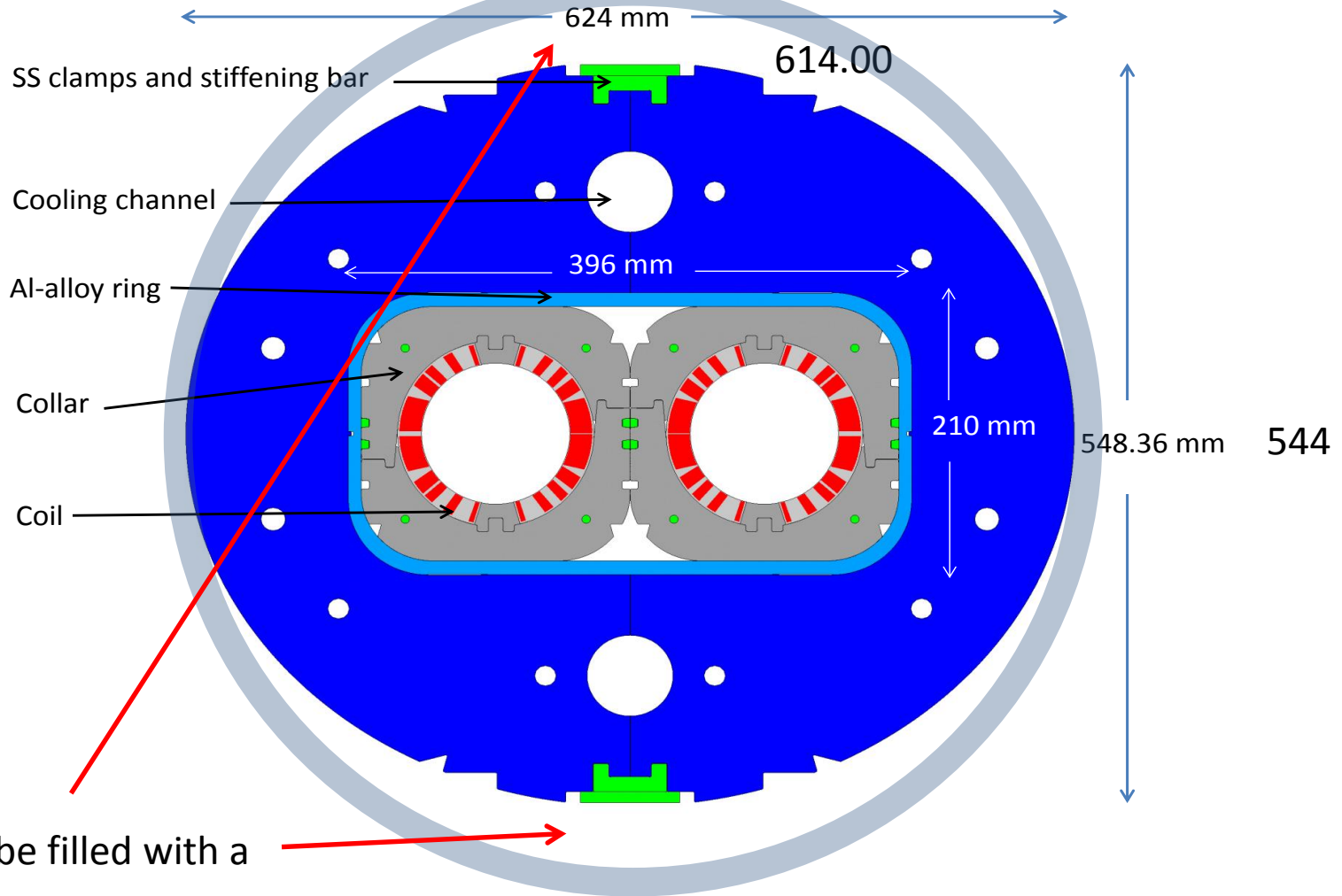
Alternative 3: In order to have the weldings in the pole, a third solution is based on two arcs of circles with a radius of 274.2 mm. In the poles, the shells shall be straightened.



Unfortunately this solution is not good for field quality (very close to full cylindrical case)

After discussion with Hervé Prin

Shell 8 mm thick
Outer diameter 630 mm
Same for all magnets



Effect of yoke reduction on multipoles

